IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No. : 09/943,150 Confirmation No. 8646
Applicant : Daniel P. DeLuca et al.
Filed : August 30, 2001
TC/A.U. : 1742
Examiner : Harry D. Wilkins III

Docket No. : PA-086-07804-US(01-415)
Customer No. : 52237

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

REPLY BRIEF

Sir:

This is in response to the Examiner's Answer mailed June 12, 2007, setting a two month period for response which expires on August 12, 2007.

Remarks/Arguments begin on page 2 of this paper.

REMARKS/ARGUMENTS

On Page 4, lines 17 - 18 of the Examiner's Answer, the Examiner makes the conclusory statement that the alloy of Erickson in view of Kenton is pore-free. This statement finds no support in either Erickson or Kenton. As pointed out in Appellants' Brief, neither Erickson nor Kenton teaches how to make a pore-free product. As pointed out by the Examiner, Erickson says that the alloys of Erickson's invention is amenable to HIP processing and that specimens showed nearly complete pore closure (see column 37, lines 55 - 58." As noted by the Examiner, Kenton teaches only "substantially complete removal of defects", not complete removal. Pore-free means that the resulting product has all pores removed or closed. Neither reference describes a process which generates a nickel base superalloy which is pore free. Thus, one of ordinary skill in the art following Erickson and Kenton would have no expectation of arriving at a pore-free nickel base superalloy and would not know how to accomplish such a result. In fact, one of ordinary skill in the art would think this to be unnecessary. The invention as set forth in all of the independent clams on appeal is not obvious because Appellants reach an unexpected result - namely, a nickel base superalloy which is pore-free.

All of the independent claims on appeal are further allowable because the Examiner has not pointed out where the references disclose an alloy which is eutectic $\gamma - \gamma'$ free. The Examiner points to the fully solutionization portions of Erickson and concludes that this means that the alloy is eutectic $\gamma - \gamma'$ free. This conclusion is wrong. The Examiner does not present any technical line of reasoning that full solutionization inherently means the alloy is eutectic $\gamma - \gamma'$ free. As Appellants have previously pointed out in its Brief, there is a cooling γ' phase which can be solutionized and later precipitated out and further, neither Kenton nor Erickson disclose of set of heat treatments for solutionizing out the eutectic γ' phase. The Examiner, in his Answer, has not responded to these arguments. It simply is not clear from the written description in Erickson that Erickson discloses the claimed invention. If anything, Erickson, by itself, or taken with Kenton, does not enable that portion of the claimed invention which relates to the claimed alloy being eutectic $\gamma - \gamma'$ free.

Still further, the claims on appeal are allowable because the Examiner has not responded to Appellants' argument, presented on page 13 of Appellants' Brief, that if one follows the teachings of Erickson and 100% fully

solutionizes, the alloys have a composition wherein the chromium content is less than 3%.

In the paragraph bridging pages 5 and 6 of the Examiner's Answer, the Examiner makes the statement that "[c]ombined with the teachings of DeLuca et al. ... of restraining crack propagation, one of ordinary skill in the art would have expected the alloy of Erickson in view of Kenton and DeLuca et al. to have the ability to resist initiation and subsequent propagation of fatigue cracks in a hydrogen environment. The Examiner provides absolutely no explanation as to why one of ordinary skill in the art would have such an expectation. Appellants submit that there is nothing in the references which would lead one of ordinary skill in the art to expect such a result. Clearly, the products in each of Erickson, Kenton, and DeLuca are different in morphology, i.e. pore-free and eutectic $\gamma - \gamma'$ free. Given this simple fact, there is absolutely nothing which would cause one of ordinary skill in the art to arrive at the claimed invention, much less expect the result to resist fatigue racks in a hydrogen environment. For this reason alone, claims 6, 10, and 24 are allowable.

In response to the Examiner's comments in paragraphs (a), (b), (c) on pages 7 and 8, Appellants note that they

achieve an unexpected result - a pore-free and eutectic γ - γ' free nickel based superalloy - a result not taught or suggested by any of the cited and applied references. With respect to the comments in point (3) on page 8 of the Examiner's Answer, it is not clear from Erickson's example 10D that any of the articles were fully solutionized. The Examiner is impermissibly interpreting what it is that Erickson means by the phrase "99.9 - 100%."

For the reasons set forth herein and in Appellants' Brief, the claims on appeal are believed to be allowable over the references of record.

Respectfully submitted,

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IN TRIPLICATE

Date: August 13, 2007

I, Karen M. Gill, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on August 13, 2007.

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